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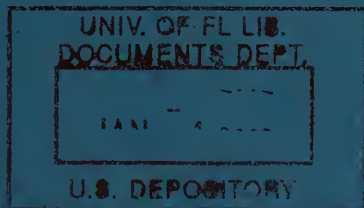
UNITED STATES MARITIME COMMISSION

INSTRUCTION COURSES  
FOR  
PERSONNEL OF THE  
AMERICAN MERCHANT MARINE

◆  
JUNE 1940

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UNITED STATES MARITIME COMMISSION


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JUNE 1940



UNITED STATES  
GOVERNMENT PRINTING OFFICE  
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UNITED STATES  
COAST GUARD  
INSTITUTE

This is to Certify that

Joseph J. Bartlett

has creditably completed the  
U. S. Maritime Service Instruction Course in

Internal Combustion Engines

with the grade of 90 per cent

Awarded this 18<sup>th</sup> day of June 1940

K. D. Baley  
Registrar

J. Hottel  
Director

W. N. Derby  
Chief Maritime Service



## **ESTABLISHMENT OF EXTENSION COURSES**

Extension courses are offered to personnel of the American Merchant Marine by the United States Maritime Commission in accordance with a statute which provides:

The Commission is hereby authorized to prescribe, conduct, and supervise such extension and correspondence courses as it may deem necessary to supplement other training facilities, and to make such courses available, under such rules and regulations and upon such terms as it may prescribe, to the licensed and unlicensed personnel of the merchant marine, and to cadets and cadet officers who shall make application therefor.

### **WHO IS ELIGIBLE**

The extension courses are offered to seamen of oceangoing and Great Lakes vessels who are active in their calling. A minimum of 12 months' service on seagoing or Great Lakes vessels over 500 gross tons during the 3 years immediately preceding the date of application is required. Both licensed and unlicensed seamen may apply for enrollment. In order to determine that applicants have the necessary educational qualifications to undertake the courses for which they apply, each application must be endorsed by the master, chief engineer, or chief purser of a vessel on which the applicant has served. Enrollees who fail to submit a reasonable number of lessons for review or who fail to continue their calling as seamen may be disenrolled.

### **CADET OFFICERS AND CADETS**

Cadet officers and cadets should apply for extension courses to the Supervisor of Cadet Training. Required courses are prescribed by the regulations for cadet officers and cadets.

### **COURSES AVAILABLE**

The Maritime Commission has arranged for the Coast Guard Institute at New London, Conn., to administer the extension courses offered to seamen. These extension courses will be known as Maritime Service Instruction Courses. They will be based largely upon the self-aid instruction texts prepared especially for the United States Maritime Service. The examinations submitted by students will be reviewed and graded by Coast Guard personnel who have qualified for such duty according to the standards approved by educational

institutions maintaining similar facilities for nonresident study. An appropriate diploma will be issued to each student completing a course satisfactorily.

### COST TO STUDENTS

The only cost to students will be the payment of a registration fee for each course selected. Each application for enrollment must be accompanied by a money order covering the entire registration fee (for the course desired as indicated below). This money order should be made payable to the **TREASURER OF THE UNITED STATES**. Instruction texts as issued become the property of the student. No refund will be made on account of the failure of the student to complete a course, but all texts will be issued upon request. The cost of administration and salaries of instructors will be borne by the Maritime Commission, and students will pay only a registration fee.

### HOW TO APPLY

An application should be submitted on the form provided by the Maritime Commission. Forms may be obtained in the principal seaports at the offices of the Maritime Commission, Coast Guard, and shipping commissioners. The applicant should fill out the form, have it endorsed by the master, chief engineer, or chief purser of a vessel on which he has served, and forward it to the United States Maritime Service, Washington, D. C.

### LIST OF COURSES AVAILABLE

#### NAVIGATION

No.	Title	Lessons
1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1982	Formulas.....	1
906	Elements of Geometry.....	1
904	Elements of Navigation.....	1
5289	Introduction to Ship Drafting (for reference only).....	
3085-A	The Compass.....	1
3085-B	do.....	1
5362	Chart, Lead, and Log.....	1
BV	Useful Tables (Bowditch) (no lesson).....	
5363	Piloting.....	1
5254	Logarithms.....	1
1154	Trigonometry.....	1
1157-A	Dead Reckoning.....	1
1157-B	do.....	1
2635	Abridged Nautical Almanac (for reference only).....	
2630-A	Nautical Astronomy.....	1
2630-B	do.....	1
2631	Latitude.....	1
2632	Longitude and Azimuth.....	1
2633	Sumner's Method.....	1
2634-A	Marq. St. Hilaire's Method.....	1
2634-B	do.....	1
2637	Ocean Meteorology.....	1
2643	International Rules and Signals.....	1
2642	Stowage of Cargo.....	1
	Final examination.....	1
	REGISTRATION FEE.....	\$10.00



## ELEMENTARY MARINE ENGINEERING

No.	Title	Lessons
1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1981	Mensuration.....	1
1982	Formulas.....	1
1965-A	Mechanical Principles.....	1
1965-B	do.....	1
2877	Heat.....	1
2878	Steam.....	1
	(Accompanied by Keenan's Steam Tables).....	
2850	Types of Marine Boilers.....	1
2851-A	Marine Boiler Details (optional).....	1
2851-B	do.....	1
2836	Pipes and Pipe Fittings.....	1
2852-A	Marine Boiler Accessories.....	1
2852-B	do.....	1
2853	Fuels and Combustion.....	1
2843	Elements of Oil Burning.....	1
2854	Oil Burning Under Marine Boilers.....	1
2855-A	Marine Boiler Feeding.....	1
2855-B	do.....	1
2859	Marine Engine Mechanism.....	1
2863-A	Marine Slide-Valve Gears.....	1
2863-B	do.....	1
2864	Multiple-Expansion Marine Engines.....	1
2865	Condensers.....	1
2869-A	Marine Pumps.....	1
2869-B	do.....	1
2873	Marine Lubrication.....	1
2315	Steam Turbines.....	1
2871	Principles of the Steam Turbine.....	1
2872	Marine Steam Turbines.....	1
	Final examination.....	0
	REGISTRATION FEE.....	\$15.00

## MARINE ENGINEERING

1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1981	Mensuration.....	1
1982	Formulas.....	1
1983	Cube Root.....	1
1965-A	Mechanical Principles.....	1
1965-B	do.....	1
2160	Strength of Materials.....	1
2877	Heat.....	1
2878	Steam.....	1
	(Accompanied by Keenan's Steam Tables).....	
2850	Types of Marine Boilers.....	1
2851-A	Marine Boiler Details.....	1
2851-B	do.....	1
2852-A	Marine Boiler Accessories.....	1
2852-B	do.....	1
2853	Fuels and Combustion.....	1
2843	Elements of Oil Burning.....	1
2854	Oil Burning Under Marine Boilers.....	1
2431-A	Pulverized Coal Burning.....	1
2431-B	do.....	1
2855-A	Marine Boiler Feeding.....	1
2855-B	do.....	1
2856	Marine Boiler Management.....	1
2857	Marine Boiler Repairs.....	1
5262	Marine Boiler Specifications.....	1
5263	Marine Boiler Inspection.....	1
2859	Marine Engine Mechanism.....	1
2861	Indicating Steam Engines.....	1
2862	Engine Testing.....	1
2863-A	Marine Slide-Valve Gears.....	1
2863-B	do.....	1
2864	Multiple-Expansion Marine Engines.....	1
2865	Condensers.....	1
2866-A	Marine Engine Management.....	1

## MARINE ENGINEERING—Continued

No.	Title	Lessons
2866-B	Marine Engine Management	1
2867	Marine Engine Repairs	1
2315	Steam Turbines	1
2871	Principles of the Steam Turbine	1
2872	Marine Steam Turbines	1
2868	Marine Deck Machinery	1
2869-A	Marine Pumps	1
2869-B	do.	1
2870	Propulsion of Vessels	1
2873	Marine Lubrication	1
2886	Principles of Marine Refrigeration	1
2887	Marine Ammonia Refrigeration Apparatus	1
2888	Marine Applications of Refrigeration	1
2889	Management of Marine Refrigeration Machinery	1
2700-A	Electricity and Magnetism	1
2700-B	do.	1
2716	Theory and Construction of Direct-Current Motors and Generators	1
2715	Characteristics of D.-C. Motors and Generators	1
2367	Alternating-Current Generators, Transformers, and Motors	1
2369	Electrical Measuring Devices	1
2239	Elements of Blueprint Reading (optional)	1
2240-A	Reading Shop Blueprints (optional)	1
2240-B	do.	1
2240-C	do.	1
2240-D	do.	1
2249	Machine Sketching (optional)	1
	Final examination	1
	REGISTRATION FEE	\$30.00

## INTERNAL-COMBUSTION ENGINES

1975	Elements of Arithmetic	1
1976	Fractions	1
1977	Decimals	1
1978	Weights and Measures	1
1979	Ratio and Proportion	1
1980	Powers and Roots	1
1981	Mensuration	1
1982	Formulas	1
5364	The Slide Rule (optional)	1
1965-A	Mechanical Principles	1
1965-B	do.	1
3147	Elementary Principles of Electricity	1
2877	Heat	1
3135	Combustion and Fuels	1
3136	Principles of the Internal-Combustion Engine	1
3137-A	Stationary Diesel Engines	1
3137-B	do.	1
3138-A	High-Speed Diesel Engines	1
3138-B	do.	1
3145-A	Marine Diesel Engines	1
3145-B	do.	1
3139	Diesel Engine Details	1
5179-A	Gas Engines	1
5179-B	do.	1
5181	Carburetors	1
5180-A	Electric Ignition Devices	1
5180-B	do.	1
3140	Internal-Combustion Engine Auxiliaries and Installation	1
3141	Lubrication	1
3143	Management of Diesel Engines	1
5182	Gas Engine Management	1
3142	Internal-Combustion Engine Testing	1
3144	Diesel Engine Troubles and Remedies	1
5183-A	Gas Engine Troubles and Remedies	1
5183-B	do.	1
5253	Lubrication and Cooling Troubles and Remedies	1
	Final examination	1
	REGISTRATION FEE	\$20.00

## FIRE-ROOM SUBJECTS

1975	Elements of Arithmetic	1
1976	Fractions	1
1977	Decimals	1
1978	Weights and Measures	1
1979	Ratio and Proportion	1
1980	Powers and Roots	1
1981	Mensuration	1
1982	Formulas	1

## FIRE-ROOM SUBJECTS—Continued

No.	Title	Lessons
1965-A	Mechanical Principles.....	1
1965-B	do.....	1
2877	Heat.....	1
2878	Steam.....	1
	(Accompanied by Keenan's Steam Tables).....	
2850	Types of Marine Boilers.....	1
2851-A	Marine Boiler Details (optional).....	1
2851-B	do.....	1
2836	Pipes and Pipe Fittings.....	1
2852-A	Marine Boiler Accessories.....	1
2852-B	do.....	1
2853	Fuels and Combustion.....	1
2843	Elements of Oil Burning.....	1
2854	Oil Burning Under Marine Boilers.....	1
2855-A	Marine Boiler Feeding.....	1
2855-B	do.....	1
	Final examination.....	1
	REGISTRATION FEE.....	\$10.00

## ENGINE-ROOM SUBJECTS

1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1981	Mensuration.....	1
1982	Formulas.....	1
5364	The Slide Rule (optional).....	1
1965-A	Mechanical Principles.....	1
1965-B	do.....	1
2859	Marine Engine Mechanism.....	1
2863-A	Marine Slide-Valve Gears.....	1
2863-B	do.....	1
2864	Multiple-Expansion Marine Engines.....	1
2865	Condensers.....	1
2869-A	Marine Pumps.....	1
2869-B	do.....	1
2873	Marine Lubrication.....	1
2315	Steam Turbines.....	1
2871	Principles of the Steam Turbine.....	1
2872	Marine Steam Turbines.....	1
	Final examination.....	0
	REGISTRATION FEE.....	\$10.00

## AUXILIARY SUBJECTS

1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1981	Mensuration.....	1
1982	Formulas.....	1
1965-A	Mechanical Principles.....	1
1965-B	do.....	1
2877	Heat.....	1
2878	Steam.....	1
	(Accompanied by Keenan's Steam Tables).....	
2867	Marine Engine Repairs.....	1
2868	Marine Deck Machinery.....	1
2870	Propulsion of Vessels.....	1
2873	Marine Lubrication.....	1
2886	Principles of Marine Refrigeration.....	1
2889	Management of Marine Refrigeration Machinery.....	1
2700-A	Electricity and Magnetism.....	1
2700-B	do.....	1
2716	Theory and Construction of Direct-Current Motors and Generators.....	1
2715	Characteristics of D.-C. Motors and Generators.....	1
2367	Alternating-Current Generators, Transformers, and Motors.....	1
2369	Electrical Measuring Devices.....	1
	Final examination.....	1
	REGISTRATION FEE.....	\$10.00

## REFRIGERATION

No.	Title	Lessons
1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1981	Mensuration.....	1
1982	Formulas.....	1
5127 (A-C)	Principles of Refrigeration.....	1
2886	Principles of Marine Refrigeration.....	1
2887	Marine Ammonia Refrigeration Apparatus.....	1
2888	Marine Applications of Refrigeration.....	1
2889	Management of Marine Refrigeration Machinery.....	1
	Service Manual No. 1.....	7
	Service Manual No. 2.....	3
	Final examination.....	1
	REGISTRATION FEE.....	\$10. 00

## WELDING

1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1981	Mensuration.....	1
1982	Formulas (optional).....	1
2209	Measuring Instruments.....	1
2202	Elementary Chemistry.....	1
5110	Metallurgy of Iron.....	1
5111	Metallurgy of Steel.....	1
2333	Metallurgy of Nonferrous Metals and Fuels.....	1
2344	Elements of Metallography (optional).....	1
5153	Gas Welding Equipment.....	1
5154	Gas Welding of Carbon Steels.....	1
5155	Gas Welding of Cast Iron and Alloy Steels.....	1
5156	Gas Cutting.....	1
5157	Gas Welding of Pipe.....	1
5158	Gas Welding of Nonferrous Metals and Overlaying.....	1
5159	Gas Welding Examples.....	1
5247	Electricity for Welders.....	1
5248	Arc Welding Equipment.....	1
5249-A	Arc Welding of Low Carbon Steels.....	1
5249-B	do.....	1
5250	Arc Welding of Alloy Steels and Irons.....	1
5251	Arc Welding of Nonferrous Metals and Overlaying.....	1
5252	Resistance Welding.....	1
5160	Inspection and Testing of Welds.....	1
2207	General Appliances and Processes (optional).....	1
2239	Elements of Blueprint Reading (optional).....	1
	Final examination.....	1
	REGISTRATION FEE.....	\$10. 00

## ELEMENTS OF ELECTRICITY

1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1981	Mensuration.....	1
1982	Formulas.....	1
1984	Trigonometry and Graphs.....	1
1621	Mechanics and Machine Elements.....	1
2700-A	Electricity and Magnetism.....	1
2700-B	do.....	1
2716	Theory and Construction of Direct Current Motors and Generators.....	1
2715	Characteristics of Direct Current Motors and Generators.....	1
2704-A	Alternating Currents.....	1
2704-B	do.....	1
5292	Alternators.....	1
5229-A	Transformers.....	1
5229-B	do.....	1
5229-C	do.....	1
5219	Alternating Current Motors.....	1
5228	Synchronous Converters and A.-C. Rectifiers.....	1
2714	Industrial Motor Applications.....	1
2369	Electrical Measuring Devices.....	1



## ELEMENTS OF ELECTRICITY—Continued

No.	Title	Lessons
53600-A	Storage Batteries	1
5360-B	do	1
5286	Electric Illuminants	1
5226	Theory of Industrial Electronic Tubes	1
2746	Electron Tubes and Their Industrial Applications	1
5365-A	Electric Heating	1
5365-B	do	1
2365	Direct Current Armature Repair	1
2366	Field Coil and Brush Maintenance	1
2742-A	Care and Repair of Fractional Horsepower Motors	1
2742-B	do	1
3226	Rewinding and Reconnecting of Fractional Horsepower Motors	1
2368-A	Alternating Current Motor Repairs	1
2368-B	do	1
3225	Rewinding and Reconnecting Induction Motors	1
	Final examination	1
	REGISTRATION FEE	\$20.00

## PRINCIPLES OF RADIO

1975	Elements of Arithmetic	1
1976	Fractions	1
1977	Decimals	1
1978	Weights and Measures	1
1979	Ratio and Proportion	1
1980	Powers and Roots	1
1981	Mensuration	1
4073-A	Elements of Algebra	1
4073-B	do	1
4073-C	do	1
4073-D	do	1
1984	Trigonometry and Graphs	1
5254	Logarithms	1
5364	The Slide Rule (optional)	1
1621	Mechanics and Machine Elements	1
2202	Elementary Chemistry	1
2700-A	Electricity and Magnetism	1
2700-B	do	1
5271	D.-C. Calculations	1
2704-A	Alternating Currents	1
2704-B	do	1
5202	Complex quantities in A.-C. Calculations (optional)	1
3309	Sound and Acoustics	1
2473	Principles of Radio Communication	1
3501	Radio Tubes	1
3501Z	Radio Tube Tables (no lesson)	1
3502	Theory of Radio Receivers	1
3503	Vacuum Tube Amplifiers	1
3504	Vacuum Tube Oscillators	1
3506	Methods of Testing Vacuum Tubes	1
3507	Principles of Vacuum Tube Design	1
3313	Batteries and Power Converters	1
3314	Audio and Power Amplifiers	1
3315	Microphones and Loud Speakers	1
3327	Public Address and Centralized Radio Systems	1
2492	Sound Picture Recording	1
2493	Sound Picture Projection	1
3316	Tuned R-F Receivers	1
3317	Superheterodyne Receivers	1
3318	Short Wave and Long Wave Receivers	1
3319	Antenna and Receiver Installations	1
3320	Automobile Radio Installation Service	1
3321	Electrical Measurements in Radio Servicing	1
3322	Diagnosis of Receiver Troubles	1
3323	Voltage and Current Tests	1
3324	Point to Point Resistance Tests	1
3325	Alignment of Tuned Circuits	1
3329	Cathode Ray Oscillograph in Radio Service	1
3328	Elimination of Radio Interference	1
2716	Theory and Construction of D.-C. Motors and Generators	1
5292	Alternators	1
5229-A	Transformers	1
5229-B	do	1
5229-C	do	1
5219	Alternating-Current Motors	1
5228	Synchronous Converters and A.-C. Rectifiers	1
2721-A	Electrical Measuring Instruments	1
2721-B	do	1
5360-A	Storage Batteries	1
5360-B	do	1
3220	Design of Magnets and Electromagnets	1

## PRINCIPLES OF RADIO—Continued

No.	Title	Lessons
2728	Design of Transformers .....	1
2014	Codes and Code Practice (optional) .....	1
2474	Radio Antennas .....	1
2018	Undamped Wave Radio Communication .....	1
2489	Radio Telegraph Transmitters .....	1
2490	do .....	1
3549	Facsimile Transmission and Reception .....	1
3550-A	Principles of Television.	
3550-B	Do.	
3550-C	Do.	
35-1	Police and Aviation Ground Station Transmitters .....	1
35-2	Broadcast Transmitters .....	1
35-4	Radio Transmitters for Telephone and Telegraph .....	1
21-1	Wavemeters and Frequency Monitoring Units .....	1
32-1	Point to Point Communication .....	1
2923	Geometrical Drawing .....	6
2924	Elements of Projection Drawing .....	4
1946	Mechanical Drawing .....	7
	Final examination .....	1
	REGISTRATION FEE .....	\$30.00

## MECHANICAL DRAWING AND READING SHOP BLUE PRINTS

1975	Elements of Arithmetic .....	1
1976	Fractions .....	1
1977	Decimals .....	1
1978	Weights and Measures .....	1
2239	Elements of Blue-Print Reading .....	1
2240-A	Reading Shop Blue Prints .....	1
2240-B	do .....	1
2240-C	do .....	1
2240-D	do .....	1
	(Accompanied by Form 3028, Illustrations for Reading Shop Blue Prints, pt. 4)	
2249	Machine Sketching .....	1
2209	Measuring Instruments (optional) .....	1
2206	Precision Measuring Instruments (optional) .....	1
994	Materials of Construction (optional) .....	1
2202	Elementary Chemistry (optional) .....	1
2923	Geometric Drawing .....	6
2924	Elements of Projection Drawing (5 plates of elementary geometrical figures for which no sample plates are furnished and the following 4 plates for which sample plates are furnished) .....	4
	200-2 Projections—I.	
	201-2 Projections—II.	
	202-2 Conic Sections—III.	
	203-2 Intersections and Developments—IV.	
1946	Mechanical Drawing (7 plates) .....	7
	637 Common Conventions (1001).	
	638 Simple Machine Details (1002).	
	639 Fastenings (1003).	
	640 Helical Forms (1004).	
	641 Pulley and Coupling (1005).	
	642 Gear Connecting Rod and Piston (1006).	
	643 Knife Switch, Assembly and Details (1007).	
2249	Machine Sketching .....	1
	Final examination .....	1
	REGISTRATION FEE .....	\$10.00

## ELEMENTARY SCHOOL SUBJECTS

[The student must select a minimum of four subjects each time application is made]

	SPELLING	
1956-A	Spelling .....	4
1956-B	do .....	4
	ARITHMETIC	
1975	Elements of Arithmetic .....	1
1976	Fractions .....	1
1977	Decimals .....	1
1978	Weights and Measures .....	1
1979	Ratio and Proportion .....	1
1980	Powers and Roots .....	1
1981	Mensuration .....	1
1986-A	Commercial Calculations .....	1
1986-B	do .....	1

## ELEMENTARY SCHOOL SUBJECTS—Continued

No.	Title	Lessons
CIVICS (AMERICAN GOVERNMENT)		
BV 2940-A-L	American Government (Magruder)..... American Government.....	12
GEOGRAPHY		
BV 2935-A-N	Human Geography (J. Russell Smith)..... Geography.....	14
GRAMMAR, ENGLISH		
3077-A	English Grammar.....	1
3077-B	do.....	1
3077-C	do.....	1
3077-D	do.....	1
3077-E	do.....	1
3077-F	do.....	1
3077-G	do.....	1
3077-H	do.....	1
3077-I	do.....	1
3077-J	do.....	1
3079	Capitalization and Punctuation.....	1
3078-A	Elements of English Composition.....	1
3078-B	do.....	1
3078-C	do.....	1
HISTORY, AMERICAN		
BV 3101 3102-A-N	History of the American People (Muzzey)..... Manual of Suggestions..... American History.....	14
LETTER WRITING		
3080-A	Letter Writing.....	1
3080-B	do.....	1
3080-C	do.....	1
3080-D	do.....	1
3080-E	do.....	1
3080-F	do.....	1
1912	Indexing.....	1
1913	Filing.....	1
PHYSIOLOGY AND HEALTH		
BV 2936-A-L	Healthful Living (Williams)..... Physiology and Health..... REGISTRATION FEE for any 4 subjects selected by the student..... \$10.00	12

## SECONDARY SCHOOL SUBJECTS

[The student must select a minimum of 4 subjects each time application is made]

ALGEBRA, ELEMENTARY		
4073-A	Elements of Algebra.....	1
4073-B	do.....	1
4073-C	do.....	1
4073-D	do.....	1
379-A	Algebra.....	1
379-B	do.....	1
379-C	do.....	1
379-D	do.....	1
379-E	do.....	1
379-F	do.....	1
379-G	do.....	1
2938	Graphs (for reference only).....	1
379-H	Algebra.....	1
379-I	do.....	1
379-J	do.....	1
COMPOSITION AND RHETORIC		
BV 3081	Composition and Rhetoric (Tanner)..... Composition and Rhetoric.....	14
ECONOMICS		
BV 2939-A-J	Fundamentals of Economics (Hughes)..... Economics.....	10

## SECONDARY SCHOOL SUBJECTS—Continued

No.	Title	Lessons
GEOGRAPHY, PHYSICAL		
BV 2937-A-O	New Physical Geography (Tarr and Von Engeln)..... Physical Geography.....	15
GEOMETRY, PLANE		
BV 2190	Plane Geometry (Wentworth and Smith)..... Plane Geometry.....	6
GEOMETRY, SOLID		
BV 2190	Solid Geometry (Wentworth and Smith)..... Solid Geometry.....	4
HISTORY, ANCIENT		
BV 3090	History of Europe, Ancient and Medieval (Robinson and Breasted)..... Ancient History.....	8
HISTORY, MEDIEVAL		
BV 3091	History of Europe, Ancient and Medieval (Robinson and Breasted)..... Medieval History.....	8
HISTORY, MODERN EUROPEAN		
BV 3092	Modern History (Hayes and Moon)..... Modern European History.....	13
PHYSICS		
BV 1807	Practical Physics (Black and Davis)..... Physics.....	11
PHYSIOLOGY AND HEALTH		
BV 2936-A-L	Healthful Living (Williams)..... Physiology and Health.....	12
TRIGONOMETRY, PLANE		
BV 883	Plane Trigonometry (Wentworth)..... Plane Trigonometry..... Final examination..... REGISTRATION FEE for any 4 subjects selected by the student..... \$10.00	7

## GOOD ENGLISH

BV 1920-A	Winston Simplified Dictionary..... Good English.....	1
1920-B	do.....	1
1920-C	do.....	1
1920-D	do.....	1
1920-E	do.....	1
1920-F	do.....	1
1920-G	do.....	1
1920-H	do.....	1
1920-I	do.....	1
1920-J	do.....	1
1920-K	do.....	1
1920-L	do.....	1
1920-M	do.....	1
1920-N	do.....	1
1920-O	do.....	1
	Final examination.....	1
	REGISTRATION FEE..... \$5.00	

## SECONDARY SCHOOL MATHEMATICS

1975	Elements of Arithmetic.....	1
1976	Fractions.....	1
1977	Decimals.....	1
1978	Weights and Measures.....	1
1979	Ratio and Proportion.....	1
1980	Powers and Roots.....	1
1981	Mensuration.....	1
1986-A	Commercial Calculations.....	1



## SECONDARY SCHOOL MATHEMATICS—Continued

No.	Title	Lessons
1986-B	Commercial Calculations.....	1
4073-A	Elements of Algebra.....	1
4073-B	do.....	1
4073-C	do.....	1
4073-D	do.....	1
379-A	Algebra.....	1
379-B	do.....	1
379-C	do.....	1
379-D	do.....	1
379-E	do.....	1
379-F	do.....	1
379-G	do.....	1
379-H	do.....	1
2938	Graphs (for reference only).....	1
379-I	Algebra.....	1
379-J	do.....	1
BV	Plane Geometry (Wentworth and Smith).....	
BV	Solid Geometry (Wentworth and Smith).....	
2190	Plane and Solid Geometry (question paper).....	10
BV	Plane Trigonometry (Wentworth).....	
883	Plane Trigonometry (question paper).....	7
	Final examination.....	1
	REGISTRATION FEE.....	\$10.00

## SEAMANSHIP

	Seamanship.....	6
	Ship Construction.....	2
	Maritime Law for Seamen.....	6
	Meteorology (Pan American Airways).....	16
	The Ship's Medicine Chest and First Aid at Sea.....	6
	REGISTRATION FEE.....	\$10.00





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